AMENDMENTS TO THE CLAIMS

The following Listing of Claims will replace all prior versions and listings of claims in the application.

1. (Currently Amended) A method encrypting characters from a data element in a database, the method comprising:

reading information identifying a data type associated with data in a particular column of the database from a location in the database, the location being outside the particular column;

reading a data element from the particular column, the data element including a first character string;

associating an index value with each character in the first character string;

defining an initial value;

creating a second character string formed by replacing each character in the first character string with the character's associated index value;

replacing each index value in the second character string with a result obtained from adding adjacent index values pairwise from the left to the right using the initial value when adding the leftmost character;

~~forming a restricting character set on the basis of the data type and on at least one data element attribute~~;

encrypting the ~~first character string into a~~ second character string wherein each character in the second character string is a valid member of the identified data type associated with the data element~~, each character in the second character string being selected from the restricting character set~~; and

storing the second character string at the particular column of the first character string in the database.

2. (Currently Amended) A method according to claim 1, ~~comprising~~wherein the ~~further~~ step of[[:]] associating an index value further comprises:

arranging one or more character sets in a pattern for a data type; and

using the pattern to determine the association of index values with each character in the first character string.

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3. (Previously Presented) A method according to claim 1, wherein the number of characters in the second character string is equal to the number of characters in the first character string.

4. (Currently Amended) A method according to claim 1, ~~comprising the further steps of:~~wherein the step of replacing each index value in the second character string further includes ~~converting each character of said first character string to an index value; and~~ adding a varying value to each index value ~~before encryption~~.

5. (Cancelled)

6. (Original) A method according to claim 1, wherein the encryption is performed using the DES algorithm in stream cipher mode.

7. (Cancelled)

8. (Cancelled)

9. (Cancelled)

10. (Cancelled)

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)

14. (Cancelled)

15. (Cancelled)

16. (New) The method of claim 1, wherein the initial value is defined by hashing an encryption key.

17. (New) The method of claim 1, wherein the step of replacing further includes adding adjacent index values pairwise from the right to the left using the initial value when adding the leftmost character.

18. (New) A method encrypting characters from a data element in a database, the method comprising:

reading information identifying a data type associated with data in a particular column of the database from a location in the database, the location being outside the particular column;

reading a data element from the particular column, the data element including a first character string;

associating an index value with each character in the first character string;

defining an initial value by hashing an encryption key;

creating a second character string formed by replacing each character in the first character string with the character's associated index value;

replacing each index value in the second character string with a result obtained from the steps of:

adding adjacent index values pairwise from the left to the right using the initial value when adding the leftmost character to obtain a first shift result;

adding to the first shift result adjacent index values pairwise from the right to the left using the initial value when adding the leftmost character to obtain a second shift result; and

adding to the second shift result a varying value;

encrypting the second character string wherein each character in the second character string is a valid member of the identified data type associated with the data element; and

storing the second character string at the particular column of the first character string in the database.

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19. (New) A method according to claim 18, wherein the encryption is performed using the DES algorithm in stream cipher mode.